North Carolina Bioterrorism and Emerging Infection Prevention System (NC BEIPS): The syndromic surveillance component of the NC PHIN

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Overview

- NC BEIPS Background
- Demonstration of NCEDD Reports Portal & EARS
- Future enhancements
- Q & A

What is NC BEIPS?

North Carolina Bioterrorism and Emerging Infection Prevention System

- Early Event Detection using secondary data sources
  - Emergency department data from the North Carolina Emergency Department Database
  - Other data sources in development (pre-hospital, poison center, veterinary laboratory, wildlife)
- Tabular, graphical and map-based results, both aggregate and line listing using in-house web portal and CDC's Early Aberration Reporting System (EARS)
- No automated alerting

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ED Data Collection Background

- 1999-2002: NCEDD in pilot phase
- 2002-2004: Rapid expansion
- 2005-Present: Launch of statewide mandate for ED data collection, NCHESS (North Carolina Hospital Emergency Surveillance System)
  - NCEDD continues data management and analysis
  - NC Hospital Association (NCHA) oversees data collection

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ED Data Collection Steps

Current NCEDD Process

- Encrypted FTP of select ED data elements from participating hospitals
    - No additional data entry required
    - Receive data in format easiest for hospital to provide
- Standardize and aggregate the data to CDC's Data Elements for Emergency Department Systems (DEEDS) standard

NCHESS process

- Hospitals standardize their own data and follow a standard HL7-based file format
- Submit via HTTPS to data provider
- Data provider aggregates and sends one file to NCEDD every 12 hours

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Database Status

As of April 15, 2005, data from 28 hospitals (24 NCEDD / 4 NCHESS)

- 4000 visit records per day on average (including both new and updated records)
- Total Number of Visits: 1,833,337
- Total Number of Patients: 978,270
- Total Number of Final Diagnosis Codes: 4,871,691

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Data Elements

- Patient & Visit IDs
- DOB, Sex
- City, County, State, 5-digit ZIP
- Arrival Date/Time
- Chief Complaint and Triage Note (when available)
- Triage Acuity Rating
- Transport Mode to ED
- Insurance Coverage
- ED Facility

- ED Disposition
- BP, Initial ED Temperature
- ICD-9 Final Diagnosis and Injury (E) codes
- Procedure Codes

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Data Users

- NC Division of Public Health epidemiologists

- Hospital-based public health epidemiologists (PHEs)

  – In-hospital liaison to local health departments in NC's 11 largest hospitals

  – Perform in-hospital surveillance for community-acquired infections and for defined syndromes which may be indicative of a terrorist attack

- Public Health Regional Surveillance Team (PHRST) members

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NCEDD Web Portal & EARS

- 24/7/365 SSL access

- Updates every morning

- Functionality offering report customization

- Role-based access

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Role-based User Access

User Types	Hospital-based PHEs	DPH	Local / Regional
Manager	NCEDD Data Hospital Network Data All hospitals within network	NCEDD Data All PHRST region data All individual county data	NCEDD Data PHRST Region Data All individual counties from assigned PHRST region
Group Only	NCEDD Data Hospital Network Data	N/A	NCEDD Data Data from assigned PHRST region
Single Site Only	NCEDD Data Hospital Data	N/A	NCEDD Data Data from assigned county

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Surveillance Details

Pre-diagnostic: syndromic surveillance

- Chief complaint, initial ED temperature, triage note (when available)

- Syndromes developed locally based on CDC infection-related syndrome definitions

  - Gastrointestinal, Gastrointestinal Severe, Influenza-like Illness, Fever/Rash Illness, Neurological Illness
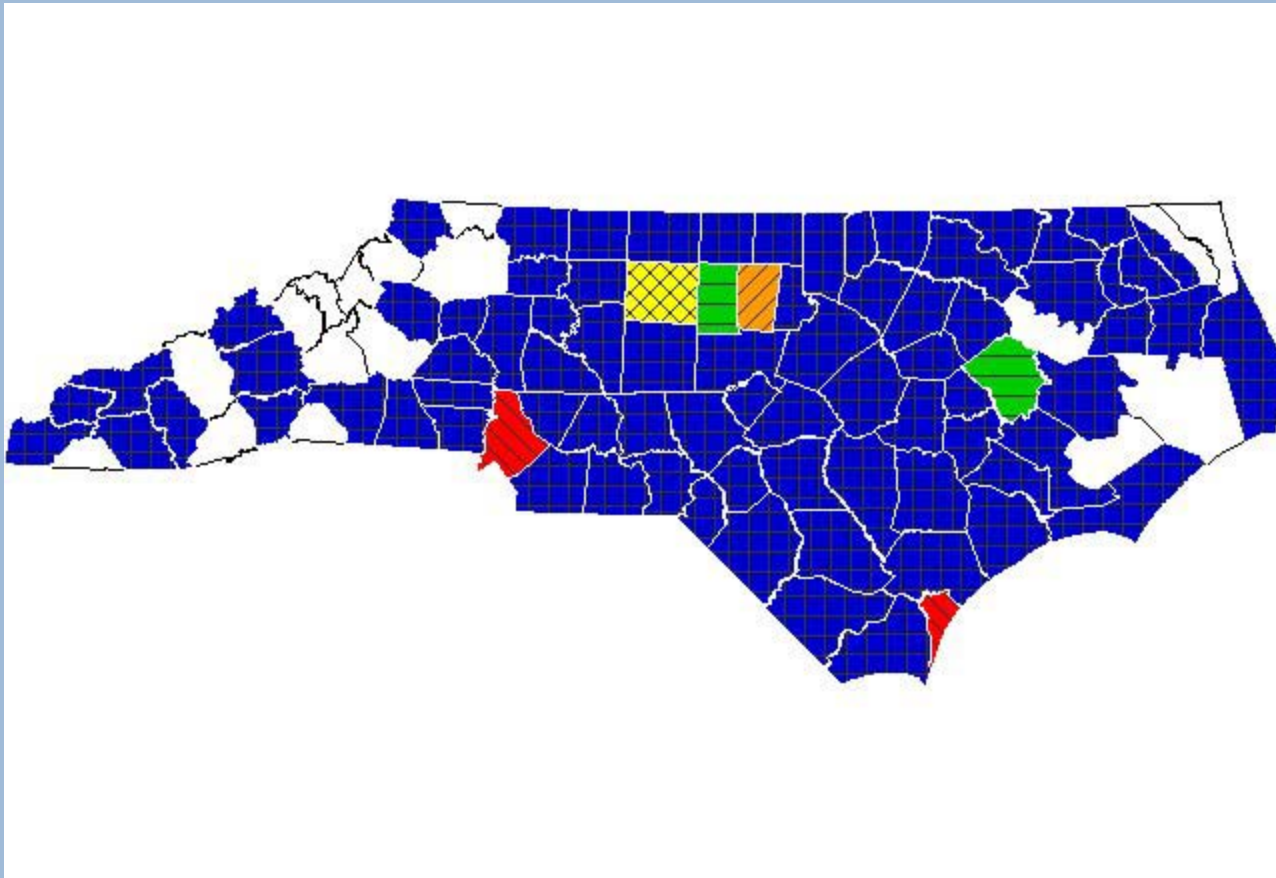
Diagnostic: ICD-9-CM-based reports also available
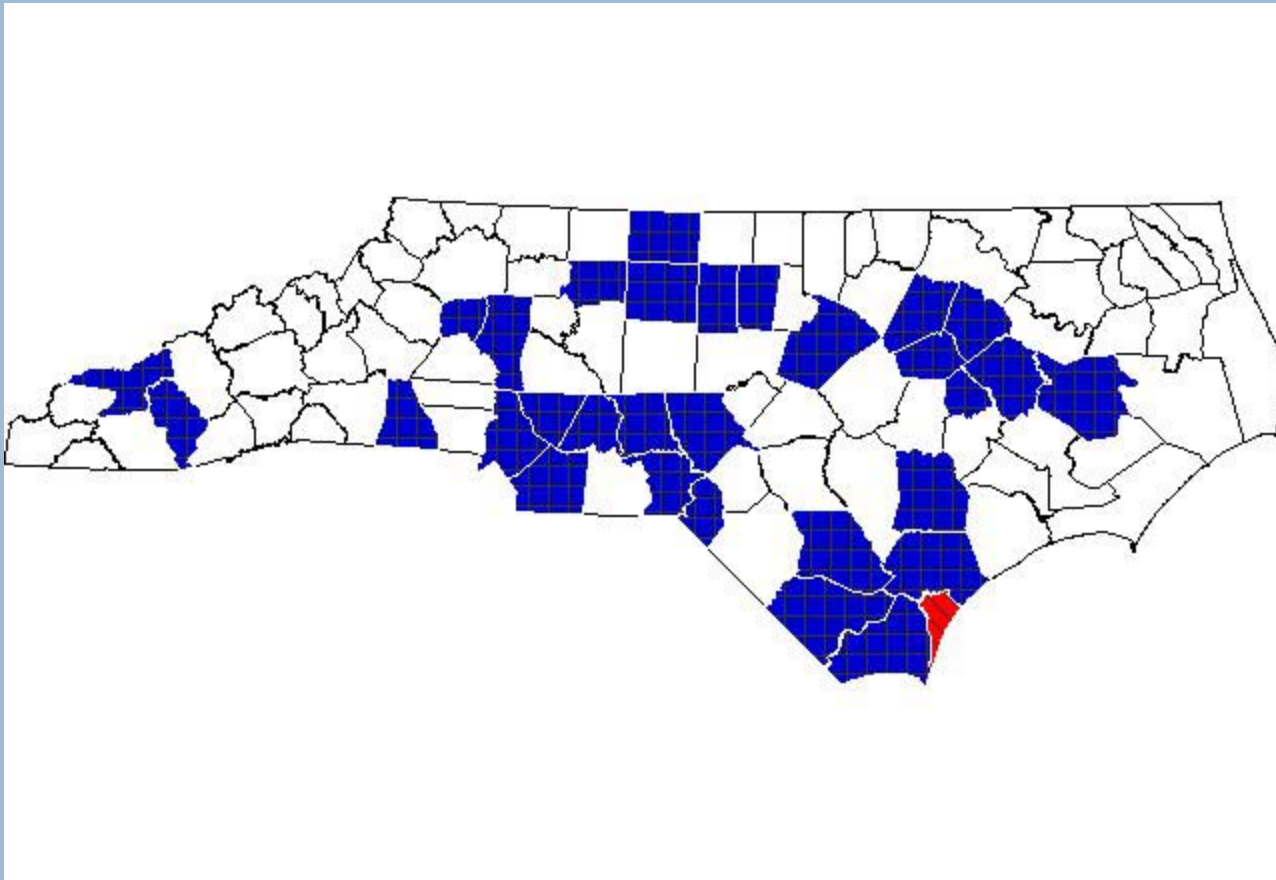
<WEB DEMO>

ILI Case Report

NCEDD, 1/1/2005-3/31/2005

n=6868

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ILI Case Report Cross-referenced with ICD-9-CM Influenza Diagnosis (487.*)
NCEDD, 1/1/2005-3/31/2005

n=179

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Future Enhancements

- Additional data sources
  - Pre-hospital
  - Poison center
  - Wildlife
  - Veterinary Laboratory
- EARS version 3
- Additional syndromes under development
- Implementation of Emergency Medicine Text Processor (EMT-P)
- Negation
- NC PHIN compliance – migration to Java platform

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